

Summary of Seattle Stakeholder Results

We have had two very successful sets of workshops / dialog sessions with Stakeholders in Seattle on August 26/27 and New Orleans on Sept 4/5.

In Seattle, Deputy Under Secretary Scott Gudes and Deputy Assistant Secretary Timothy R.E. Keeney hosted the first day workshops for the Atmospheric and the Climate Stakeholders in the a.m. and Ocean and Resource Management Stakeholders in the afternoon. They also hosted the second day General Stakeholder Dialog Session and Employee Session. About 60 External Stakeholders actively participated in the two days of facilitated discussion.

The External Stakeholders represented industry, state governments, non-profits and academia covering a good range of traditional NOAA Stakeholders.

The Stakeholders suggested 5 major themes for the NOAA Strategic Plan as follows:

- Protect Life and Property
- Improve National Defense and Homeland Security
- Support Commerce/ Economic Development
- Healthy Oceans, Coasts and Coastal Communities
- Sustainable Species

The Stakeholders also developed a list of key outcomes they would like to see NOAA produce. Examples include:

Under **Protect Life and Property**, they called for

- A decrease in the loss of life due to extreme weather events. including coastal erosion, tsunami flooding and ocean wave flooding;

- Reduced time required for evacuation routes and associated costs; and

- Reduce close calls in respect to aviation safety

Under **National Defense and Homeland Security**, they called for:

- Improvements in weapon efficiency and force readiness;

- A decrease in false alarms; and

- Predictions of the economic dislocations that may occur from climate change

Under **Support of Commerce and Economic Development**, they called for

- Improvements in employments in coastal and ocean related industries

- Expansion of ocean energy technology;

- Improving weather forecasts for weather dependent industries (fisheries, energy, aviation, agriculture, etc.); and

- Optimum path routing for ships.

Under **Healthy Oceans, Coast and Coastal Communities**, they called for:

- Restoration of brownfields and degraded coastal areas, including reconnecting isolated habitats;

- Improved predictions of water resource availability for community planning;

- Improved coastal water quality; and

- Improved recreational opportunities.

Under **Sustainable Species**, they called for:

Stabilization in an upward trend for listed, threatened and candidate species; and
Increased supplies of fish to meet consumption/ harvesting of fish;

On the second day, the Stakeholders were divided into small groups to discuss key strategies for each of the above major End Outcome areas.

In general terms they called for improved data and predictions, better communication of the data and predictions to change human behavior, development of regional approaches to improving coastal ecosystem health, and strengthened partnerships.

The NOAA also met with about 150-200 NOAA Employees at Sand Point, who expressed great interest and energy when reviewing the information for the External Stakeholders. They questioned the need for a National Defense /Homeland Security separate theme and desired some form of recapture of science themes and capabilities.

The complete list of Stakeholder Points made based on the unedited notes taken from flip charts or quickly recorded on the laptop are documented below.

Seattle Stakeholder Session Day 1 Notes

The Stakeholder meeting held in Seattle focused on identifying key End Outcome Goals for NOAA and then talking about key indicators of success for each of the these five End Outcome goals. The outcome goals are meant to be broad areas where NOAA can bring about a positive change for society. The five areas identified were:

1. Protect Lives and Property
2. Improve National Defense and Homeland Security
3. Support Commerce and Economic Development
4. Healthy Oceans, Coasts and Coastal Communities
5. Healthy Species

Under each of these five outcome goals, the stakeholders spent time talking about key indicators of success for each of the End Outcomes. If these indicators are being met, the stakeholders believed that NOAA would be successful in meeting the End Goals. All indicators are listed in bullet form below the corresponding end outcome.

OUTCOME ONE: PROTECT LIVES AND PROPERTY

- No loss of life from severe weather extremes; produce statistics showing decrease in deaths due to not knowing weather information
- predict and preempt wildfires; anticipate fireload short term and long term.
- reduce time required for evacuation and costs associated.
- Costs of losses
- Protect communities against environment and climate change.
- Increase prediction and understanding of variability of extreme events
- Improve understanding between weather, climate and public health issues
- Emergency preparedness and mitigation.
- Reduce close calls, in respect to aviation safety.
- False alarms, decrease the number of false alarms
- Empower the states to predict erosion along coastlines
- Decrease loss of life and property along coastlines from erosion and tsunami flooding, ocean wave flooding and extreme events; Reduces loss of property through erosion.
- Accident free shipping in US harbors and waterways, coasts
- Search and rescue
- Respond and restore by erosion damage
- Avoid derby fishing

OUTCOME TWO: IMPROVE NATIONAL DEFENSE AND HOMELAND SECURITY

- Improve weapon efficiency
- Improve force readiness

- Decrease uncertainty with evacuation notices
- Air dispersion modeling
- Avoidance of false alarms, eg. Weather prediction (ships and planes).
- Expand information superiority
- Climate change is going to effect distribution of resources. This will effect decisions we make. Anticipating climate induced political instability (eg. water supply and political effects in middle east, energy use – where we get oil)

OUTCOME THREE: SUPPORT COMMERCE/ECONOMIC DEVELOPMENT

- Employment in coastal and ocean related industries. High quality, high wage employment
- Maritime commerce
- Agriculture
- Aquaculture
- Improved utilization of marine resources
- Food supply, fish
- Development of new products and businesses from oceans and marine resources. Higher jobs, revenue, new sources of nutrition.
- Ocean energies expanded
- Transition between basic and applied products.
- Microalgae, supplements, pharmaceuticals
- Maintain and expand fishing industry infrastructure
- Recreational opportunities
- Ecotourism
- Reducing bycatch
- Utilization of bycatch
- Reduce environmental footprint from consumption
- Sustainable forests, supporting adaptive management to resources management.
- Improve forecasts of weather dependant variables. Weather and climate sensitive industries e.g. energy, aviation, agriculture, tourism, fishing, fisheries, healthcare, forestry, transportation, retail, food services, mining, insurance.
- Capitalize opportunities associated with environmental, climate change.
- Commercial activities that use NOAA information
- Optimizing the relationship between free data and proprietary information.
- Cost associated with adverse impacts of weather.
- Optimum path routing (enhance speed, safety, economy, bathymetry)
- Optimize government investment in routing

OUTCOME FOUR: HEALTHY OCEANS COASTS, AND COASTAL COMMUNITIES

- All coastal brownfields/polluted sites restored
- Manage climate sensitive natural resources (coral reefs, fisheries) Condition of the resource.

- Improved water resources, making better use of seasonal forecast to better manage water resources for economic and environmental goals.
- Recreation; Decrease the loss of sandy beach on coastline. Sandy beach is a public resource that supports tourism and recreation.
- Improve quality of life for coastal population due to proximity to water.
- Reduction, assessment and remediation in chemical and oil spills on coastal waters
- Sustained coastal communities,
- Appropriate hydrologic regime and water quality for all areas covered.
- Sediment, controlling the ecosystem disruption
- Riparian and estuary functions
- Isolated habitats needing reconnection
- Assess and mitigate affects of climate change
- Coastal Zone management Act compliance
- Protecting novel ecosystem (reefs, and hydrothermal vents.)

OUTCOME FIVE: SUSTAINABLE SPECIES

- Stabilize or create upward trend for listed, threatened, candidates, species. Trust species. Protect Ecosystems
- Increased supplies of fish to meet consumption, harvesting of fish.

KEY STRATEGIES

- Mapping ocean habitat to understand use by all species
- Protect harbors, estuaries and local ecosystems from negative impacts of invasive species.
- Good nautical charts are means to increase capacities
- Enhanced ocean literacy in population
- Improve prediction of catastrophic events
- Provide information to decision makers to limit population density and development in high risk area
- Development of non consumptive/intrusive products
- Increased recognition of what NOAA does.
- Develop monitoring system to meter scale for all ocean and coastal processes
- Identify and protect critical habitat for fish.
- Sustainable aquaculture for consumption and stock enhancement
- NOAA has ability to predict or model interspecies interaction. Further, effect of weather on their interactions.
- Improve scientific of marine environment and resources
- Improve decision processes for management
- Increase the accuracy and the speed of tsunami warnings for coastlines.
- Improved certainty when it comes to management for species
- Improve NOAA enforcement ability

- Improved collaboration with native American tribes
- Work on full funding for mapping and charting
- Update hydrography surveys
- Enhance spill trajectory modeling
- Correct backlog on surveys
- Improve shore mapping to make it useful to decisionmakers
- Better coastal management resource for the west coast states
- Accurate and timely stock status information
- Accurate information on critical habitat
- Enhanced operating and research budget, value of resources maintained
- Perform more strategic partnerships to increase efficiencies
- Expand intergovernmental partnerships
- Cross cutting coordination on similar research
- R&D increase for aquaculture tied to 1% of seafood trade deficit.
- Methodologies and benchmarks with other resource managers worldwide.
- Establish external marine advisory committee for aquaculture
- Increase R&D on aquaculture
- Structure management around ecosystems to greater extent
- To set up explicit structure in NOAA for research to keep org from becoming static; what observations need to be made and tools necessary.
- Stronger mechanisms for assisting local and state government decision makers to improve decisions in near shore areas.
- Build stronger citizen support system for MPA development and sustainable resources.
- Support scientific research for improved identification of storm waves and tsunami hazard sources
- Direct support of state hazard mapping and assessment programs.
- More outsourcing, using private sector resources
- Fix contracting process/Grants too.
- Infrastructure commensurate with being able to accomplish mission, adequate ship time.
- Establish single point of contact for NOAA services at regional levels.
- More contact with local/state and community leaders
- Community based incentive based
- Economic analysis for habitat
- Help develop less invasive, natural stabilization techniques.
- Work with coast guard, epa and shipping industry to develop better methods for dealing with bilge water.
- Explain to Congress that many science budgets don't work on year to year. 5 year budgets
- 4 year holiday from earmarks and pet projects.
- Making NOAA, HUMAN Capital more effective. Better place to work, recruit, retain and train people successfully.

- Improve emphasis on science as a cornerstone of mission...both current mission and future missions.
- Develop and utilize a full ecological model on estuaries.
- Implement biologic and chemical and physical observing system along coasts.
- Please have public education element in everything
- Teach communications to on the grounds folks who interact with public.
- NOAA would fulfill all legal mandates to protect
- Provide full funding for observer programs
- Regional council system, increase NOAA NMFS coordination with council, North pacific as a model
- Increase coordination of national efforts to create essential habitats
- Increase social science capability throughout NOAA to deal with human dimension of ocean and coastal resource problems.
- Create knowledge base of economic contributions of coastal and marine resources to the US Gross Domestic Product.
- Simplify permitting process
- Define recovery goals for endangered species
- Stop approving projects that violate goals and strategies.
- Agency to become strong advocate for fully protected marine areas
- More scientific surveys, integrate with fishing vessels.
- Some overlying part of NOAA that takes data and makes sense of it from the big picture standpoint
- National, federally funded program to collect biological and scientific data
- Delay, decentralize
- Climate observing system that satisfies recognized climate criteria, without it we can't have authoritative information to satisfy agency mission.
- Better, more accurate coastal flood maps. Areas not mapped. Coverage rate
- Better targeting of warning facilities.
- Reducing observational uncertainty. We don't have observational systems for long term observation and monitoring.
- Looking at ways to convey forecasting information to decision managers. They need to understand there are uncertainties to make timely decisions on evacuations.
- A vibrant climate services program for the nation that engages NOAA and partners at all levels to deliver timely useful information.
- Improve modeling and prediction
- Respond quickly to unexpected rise in a phenomenon. Recognize how climate system changes rapidly.
- Distinguish the changes from natural and man made changes
- Produce weather forecasts through partnering and groups to improve forecasts and save money. Maximize cross agency capabilities.
- Technological superiority
- Reduce false alarms, evacuation time, mitigation efforts and increase education.
- Educate workforce and public to use NOAA products and services

- Reduce the tsunami notification times
- Increase 24 hour coverage of warning centers to increase rapid communications to local communities
- Increase of the overall mapping efforts and other technological models available to give to communities for risk assessment
- Increase skill level in seasonal climate forecast
- Tsunami forecast skills increased
- Become a national leader of providing scientific expertise to stakeholders
- Create a standardized methodology for coastal flood and tsunami prediction
- Improve public understanding of risk in forecasts
- Permeate the notion that climate change affects all sorts of decisions
- Improve forecast accuracy for land surface variables., soil, moisture, streamflows
- Develop hydrological relevant skills score for floods
- See tsunami model linked with buoy system
- Tsunami model for prediction for landslides
- Better idea of magnitude of changes in next hundred years due to climate change
- Better understanding of decadal and temperature shifts and their effect on shore and off shore
- Better bathymetrics modeled
- Infrastructure and people in information tech to do that. Super computers to do modeling
- HR succession plan to recruit next generation NOAA scientists and managers
- More focus on stakeholder partnerships and Use of climate knowledge
- More focus and understanding on regional climate variability
- Sustained dialogue and interaction with clients and partners to understand information needs and evaluate products and services
- Better integration of NOAA environmental prediction and resource management program and activities
- Interagency fire weather program between NOAA and other land management agencies
- Need forecast of winds, humidity for climate forecasting
- Congress to recognize role of NOAA in supporting all agencies (fed, state, local) in fire use and wild fire.
- Longer range forecasts, 2 weeks to a month
- Climate service including support necessary
- Research to support climate service
- Assimilate and disseminate data. NOAA take lead in avoiding information overload.
- Focus on transition of ocean climate and weather research to operation. Apply information.
- NOAA to become world leader in observation and predictive sciences
- Perfect division of labor within NOAA scientist to compete internationally.
- Make efforts in distinguishing between man made and natural changes in climate

- NOAA takes leadership in better use of scientific information to other agencies. Improve interaction between agencies.
- Actively support research needed to design, improve and maintain an efficient climate observing system
- Actively support research needed to improve the climate models used for prediction.
- Improve models for prediction
- Apply hurricane methodology
- Serious look at historical records and quality of the data.
- Partner with FEMA to develop a tsunami model in HAZUS, use as a loss estimation model for tsunami communities
- Continue to Develop and refine means to predict and warn for distant and local tsunami
- Expand bathymetric mapping program to all communities at risk, to be completed in the next 10 years
- NOAA define, integrate and address accordingly all national ocean, weather, and climate requirements
- View of global ocean data assimilation experiment and emerging hyper-spectral and other high volume data streams
- NOAA tackle the issue of data assimilation and dissemination as a grand challenge.
- Measure communication to public and improve communication
- Create confidence in data.
- Quality of information being conveyed
- Improved public perception
- Existence and clarity of universal standards for environment.

Seattle Day Two

The external stakeholders were able to choose between one of the five End Outcomes identified on day 1 and they spent the morning talking as a group about possible measures and strategies which would be useful for the specific End Outcome. At the end of the morning, each group presented their findings to the whole group. The information below captures important themes brought up within each group.

Group One: Protect Lives and Property

Group One focused on Various strategies which might be useful for their end outcome area. These include:

- Improve the Observational network/database
- Enhanced modeling
- Measuring Lives and Property Saved, How best to accomplish this?
- Human Behavior – Getting out of Harms Way
- Communication, Getting the word out

- Mitigation Strategies to reduce impacts
 - a. Potential hazards
 - b. Partnerships with Ins. States
- Full Partnerships with States in the area of planning and policy
- Hazard Assessment and Mapping
- Climate Data
 - a. Historical Dates eg. Tides
 - b. Predicting Change
 - c. Reduce Observational Uncertainties
- Performance Information
- Mitigation Performance Cost/'Benefit
- Education

Group Two: Improve National Defense and Homeland Security

The second group would like to see useful performance measures developed for improving National Defense and Homeland Security for each of the following:

- NOAA's meeting it's role in identifying an exercise range available for DoD training requirements
- A "GIS" that consists of a National Geospatial frame of reference and the appropriate environmental data (ocean, atmospheric, climate, terrestrial). Observational and predictive capability supports stakeholder fidelity requirement.

Things they deem important include:

- Build an interoperable observation network and plan to handle data assimilation in view of next generation data volume. (satellites, models, etc.)
- Build and implement GIS like approach to data sharing.
- Develop strategy to balance stewardship defense and HCS requirements. (Political, Scientific and PR?)

Group Three: Support Commerce/Economic Development

This Group identified key areas and strategies and then started to talk about measures that will be necessary that cover each key issue.

A Cross-cutting Strategy: Improve the Development and application of useful and usable environmental conditions.

- Research and Development
- Technological Development
- Getting Information out
- Market Development and Promotion
- Reduce Ecological Footprint

Related to Health and Development of Resources:

- Fisheries employment (level of stability)

- Aquaculture and wildcatch, NOAA's job to information and tools to support...
- Industry and Development
- Trade and Commerce (Markets et all)
- Management of Resources

Measures:

- Reduce Trade Deficit in Fisheries
- Improve State of Resources
- Contribution/Use of Res, date
- Economic Growth in Marine Industries, climate sensitive industries

Maritime Commerce:

- Insurance
- Ballast water
- Invasive Species

Improved Understanding of value of resources and Marine commerce and healthy environment:

- \$ marine
- Industries (eg. Tourism)
- Weather climate-sensitive

Rationalization of Marine and Coastal Resources

- Improved Utilization
- Reduce ByCatch
- Reduce Environmental Footprint
- Reduce Derby Fishing
- Use of Weather and Climate Resources
- Resource evaluations/Stock assessments
- Lives saved/Fishing in hazardous conditions
- Recognize roles of all parties (Public/industry sector communities)
- Quality of Life (Development of Infrastructure)

Recreation

- Enhance Understanding of value of resources (eg. Fisheries)
- Whale watching, coral reefs
- Reduce Environmental Footprint
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Fisheries

- Aqua Culture
- Rationalization of Marine and Coastal Resources
- Enhance Development and Promotion of Industries Dependent on Marine and Coastal Resources and Healthy Environment
- Research and Development

1. Environmental Conditions
2. Resources
3. Economic Values

Enhance the Contribution of Fisheries (Aquaculture and wildcatch to the economy)

- Reduce Trade Deficit
- Improve State of Resources
 1. Amount of seafood available
 2. Value of resources

Economic Stability and Growth in Coastal communities

- Enhanced Information on Economic Value of Marine and Coastal Resources and Industries
- Improved Access to use timely and useable information
- Reduce energy used per unit produced

Effective Utilization of Marine and Coastal Resources

- Develop Growth in sustainable regionalized economies
- Improved safety record in Marine Industries
- Economic Growth in industries and dependant on marine and coasts and a healthy coastal environment
- Reduction in application for government subsidies
- Reduction in unemployment rates (associated with marine and coastal industries)
- Reversal in outmigration

Real Growth in USGNP as contributed by major and coastal industries at twice the annual Inflation rate

- Enhance the contribution of fisheries (wild catch and aquaculture) to the economy
- Develop growth in sustainable regionalized economies
 - Rationalization
 - Utilization of resources
 - Products
- Increase the funding for R&D to develop tools and products necessary
- Decrease Trade Deficit by increasing exports

Group Four: Healthy Oceans, Coasts and Coastal Communities

Healthy Ecosystems

1. Charge: 3-4 measures with refined definitions and strategies
2. Redefined tasks/methods. What is a vision of NOAA for 5, 15, 50, 100 years from now? What should be doing?

Achieve a better understanding of oceans and oceanic ecosystems in order to manage.

- NOAA and assessment mission.

A. Some Global National Assessment.

1. Nested Regional Efforts

A. Participate in creating and maintaining adaptable and flexible regional conceptual models of ecosystems and ecosystem-based management

To include:

- Develop conceptual ecosystem models
- Partner with regional organizations
- Participate in adaptive management based science
- Nest models in global context
- Adopt definitions of regions – political or ecological boundaries
- Establish monitoring system to supply data for “testing” conceptual model for management

Outcomes:

- Indices for EEZ on west coast
- Improvement of local indices
- Number of regions with scientific and regulatory models
- Mapping ocean habitat

B. Define Interspecies Interactions

To Include:

- Determine effectiveness of MPA's
- Quantify adverse effects.
Eg. foreign fishing, pollution, long range pollution transport, Contaminant mix effects

The group brought up a number of questions that they wanted to make sure were addressed.

1. Where does basic and applied research/science fit in strategic plans
2. What are assumptions about NOAA as we discuss Strategic Plan
3. What is NOAA's authority regarding “coastal” issues?
4. Is NOAA an “assessment” or management agency?

Outcome Indicators Identified:

1. Less damage to ocean bottom habitat from fishing
2. Regional definition of “healthy” ocean/coast
3. Be open and foster regional partnerships and models
4. Explore, characterize and monitor ocean
5. Water quality standards be met in all sanctuaries.
6. Adaptable and flexible regional management model for coastal issues including:

- Development of regional models
- Partner with Regional organizations
- Adaptive management based on scientific research
- Models developed in global context
- Adopt regional definitions by reorganizing existing boundaries
- Regional models for all ecosystems (e.g. west coast)
- Establish baseline and monitoring system
- Indices for EEZ on west coast
- Improvements for indices for specific regions
- I.D. problems first and time scales for addressing them.
- Measure number of regional models
- Perform more strategic partnerships to increase efficiencies.
- Coastal/Ocean observing systems
- Mapping ocean habitat
- Develop monitoring system
- Define interspecies interaction
- Determine effectiveness of MPA's
- Quantify adverse effects to coastal health
- NOAA should Provide leadership in partnership with states
- Evaluate North Pacific Research Board as a model for regional partnerships.

Group Five: Sustainable Species

This group identified three trust species responsibilities.

- Recovery Listed Stocks (ESA/MMPA)
- Recovery of Depleted Stocks
- Maintain Healthy Stocks

The group spent time talking about key measures they felt necessary for sustainable species. These measures include:

- Keep human removals below levels that will prevent recovery of listed species
- Improve predictions of trends in selected species (increases or decreases)
- Improve compliance/implementation rate of environmental laws (use of independent environmental audits)
- Reduce by X the # of overfished stocks. (This still requires a definition)

Lastly, the group came up with a number of key strategies they felt important. These include:

- Adoption of the recommended strategies of NRC
 1. Good science
 2. Conservative quotas
 3. Effective monitoring
 4. Effective enforcement
 5. Reduce over-capitalization
 6. Rationalize fishing effort
 7. Develop and implement ecosystem based management (needs definition)
- Improve scientific measures of status and health of marine environment and resources
- Develop effective PR (Congress/Constituents)
- Long term budget horizon of 5 years
- Map habitat and protect habitat of special concern (EFH, HAPC, coral reefs, etc.)
- Predict effects of climate change on selected populations.